



SEQUENCE LISTING

<110> MOESTRUP, Soren
MOLLER, Holger J.

<120> THE FUNCTION OF A HAPTOGLOBIN-HAEMOGLOBIN RECEPTOR AND THE USES
THEREOF

<130> MOESTRUP=1A

<140> 09/977,577

<141> 2001-10-16

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<151> 2001-02-22

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<151> 2000-10-16

<160> 25

<170> PatentIn version 3.1

<210> 1

<211> 347

<212> PRT

<213> Homo sapiens

<400> 1

Met Ser Ala Leu Gly Ala Val Ile Ala Leu Leu Leu Trp Gly Gln Leu
1 5 10 15

Phe Ala Val Asp Ser Gly Asn Asp Val Thr Asp Ile Ala Asp Asp Gly
20 25 30

Cys Pro Lys Pro Pro Glu Ile Ala His Gly Tyr Val Glu His Ser Val
35 40 45

Arg Tyr Gln Cys Lys Asn Tyr Tyr Lys Leu Arg Thr Glu Gly Asp Gly
50 55 60

Val Tyr Thr Leu Asn Asn Glu Lys Gln Trp Ile Asn Lys Ala Val Gly
65 70 75 80

Asp Lys Leu Pro Glu Cys Glu Ala Val Cys Gly Lys Pro Lys Asn Pro
85 90 95

Ala Asn Pro Val Gln Arg Ile Leu Gly Gly His Leu Asp Ala Lys Gly

| | | |
|---|-----|-----|
| 100 | 105 | 110 |
| Ser Phe Pro Trp Gln Ala Lys Met Val Ser His His Asn Leu Thr Thr | | |
| 115 | 120 | 125 |
| Gly Ala Thr Leu Ile Asn Glu Gln Trp Leu Leu Thr Thr Ala Lys Asn | | |
| 130 | 135 | 140 |
| Leu Phe Leu Asn His Ser Glu Asn Ala Thr Ala Lys Asp Ile Ala Pro | | |
| 145 | 150 | 155 |
| 160 | | |
| Thr Leu Thr Leu Tyr Val Gly Lys Lys Gln Leu Val Glu Ile Glu Lys | | |
| 165 | 170 | 175 |
| Val Val Leu His Pro Asn Tyr Ser Gln Val Asp Ile Gly Leu Ile Lys | | |
| 180 | 185 | 190 |
| Leu Lys Gln Lys Val Ser Val Asn Glu Arg Val Met Pro Ile Cys Leu | | |
| 195 | 200 | 205 |
| Pro Ser Lys Asp Tyr Ala Glu Val Gly Arg Val Gly Tyr Val Ser Gly | | |
| 210 | 215 | 220 |
| Trp Gly Arg Asn Ala Asn Phe Lys Phe Thr Asp His Leu Lys Tyr Val | | |
| 225 | 230 | 235 |
| 240 | | |
| Met Leu Pro Val Ala Asp Gln Asp Gln Cys Ile Arg His Tyr Glu Gly | | |
| 245 | 250 | 255 |
| Ser Thr Val Pro Glu Lys Lys Thr Pro Lys Ser Pro Val Gly Val Gln | | |
| 260 | 265 | 270 |
| Pro Ile Leu Asn Glu His Thr Phe Cys Ala Gly Met Ser Lys Tyr Gln | | |
| 275 | 280 | 285 |
| Glu Asp Thr Cys Tyr Gly Asp Ala Gly Ser Ala Phe Ala Val His Asp | | |
| 290 | 295 | 300 |
| Leu Glu Glu Asp Thr Trp Tyr Ala Thr Gly Ile Leu Ser Phe Asp Lys | | |
| 305 | 310 | 315 |
| 320 | | |
| Ser Cys Ala Val Ala Glu Tyr Gly Val Tyr Val Lys Val Thr Ser Ile | | |
| 325 | 330 | 335 |

Gln Asp Trp Val Gln Lys Thr Ile Ala Glu Asn
 340 345

<210> 2
 <211> 406
 <212> PRT
 <213> Homo sapiens

<400> 2

Met Ser Ala Leu Gly Ala Val Ile Ala Leu Leu Leu Trp Gly Gln Leu
 1 5 10 15

Phe Ala Val Asp Ser Gly Asn Asp Val Thr Asp Ile Ala Asp Asp Gly
 20 25 30

Cys Pro Lys Pro Pro Glu Ile Ala His Gly Tyr Val Glu His Ser Val
 35 40 45

Arg Tyr Gln Cys Lys Asn Tyr Tyr Lys Leu Arg Thr Glu Gly Asp Gly
 50 55 60

Val Tyr Thr Leu Asn Asp Lys Lys Gln Trp Ile Asn Lys Ala Val Gly
 65 70 75 80

Asp Lys Leu Pro Glu Cys Glu Ala Asp Asp Gly Cys Pro Lys Pro Pro
 85 90 95

Glu Ile Ala His Gly Tyr Val Glu His Ser Val Arg Tyr Gln Cys Lys
 100 105 110

Asn Tyr Tyr Lys Leu Arg Thr Glu Gly Asp Gly Val Tyr Thr Leu Asn
 115 120 125

Asn Glu Lys Gln Trp Ile Asn Lys Ala Val Gly Asp Lys Leu Pro Glu
 130 135 140

Cys Glu Ala Val Cys Gly Lys Pro Lys Asn Pro Ala Asn Pro Val Gln
 145 150 155 160

Arg Ile Leu Gly Gly His Leu Asp Ala Lys Gly Ser Phe Pro Trp Gln
 165 170 175

Ala Lys Met Val Ser His His Asn Leu Thr Thr Gly Ala Thr Leu Ile
 180 185 190

Asn Glu Gln Trp Leu Leu Thr Thr Ala Lys Asn Leu Phe Leu Asn His
 195 200 205

Ser Glu Asn Ala Thr Ala Lys Asp Ile Ala Pro Thr Leu Thr Leu Tyr
 210 215 220

Val Gly Lys Lys Gln Leu Val Glu Ile Glu Lys Val Val Leu His Pro
 225 230 235 240

Asn Tyr Ser Gln Val Asp Ile Gly Leu Ile Lys Leu Lys Gln Lys Val
 245 250 255

Ser Val Asn Glu Arg Val Met Pro Ile Cys Leu Pro Ser Lys Asp Tyr
 260 265 270

Ala Glu Val Gly Arg Val Gly Tyr Val Ser Gly Trp Gly Arg Asn Ala
 275 280 285

Asn Phe Lys Phe Thr Asp His Leu Lys Tyr Val Met Leu Pro Val Ala
 290 295 300

Asp Gln Asp Gln Cys Ile Arg His Tyr Glu Gly Ser Thr Val Pro Glu
 305 310 315 320

Lys Lys Thr Pro Lys Ser Pro Val Gly Val Gln Pro Ile Leu Asn Glu
 325 330 335

His Thr Phe Cys Ala Gly Met Ser Lys Tyr Gln Glu Asp Thr Cys Tyr
 340 345 350

Gly Asp Ala Gly Ser Ala Phe Ala Val His Asp Leu Glu Glu Asp Thr
 355 360 365

Trp Tyr Ala Thr Gly Ile Leu Ser Phe Asp Lys Ser Cys Ala Val Ala
 370 375 380

Glu Tyr Gly Val Tyr Val Lys Val Thr Ser Ile Gln Asp Trp Val Gln
 385 390 395 400

Lys Thr Ile Ala Glu Asn
 405

<210> 3
 <211> 347
 <212> PRT
 <213> Ateles geoffroyi

<400> 3

Met Ser Ala Leu Gly Ala Val Ile Ala Leu Leu Leu Trp Gly Gln Leu
 1 5 10 15

Phe Ala Val Asp Ser Gly Asn Asp Val Thr Asp Ile Ala Asp Asp Gly
 20 25 30

Cys Pro Lys Pro Pro Glu Ile Ala Asn Gly Tyr Val Glu His Leu Val
 35 40 45

Arg Tyr Gln Cys Lys Lys Tyr Tyr Arg Leu Arg Thr Glu Gly Asp Gly
 50 55 60

Val Tyr Thr Leu Asn Asn Glu Lys Gln Trp Thr Asn Lys Ala Val Gly
 65 70 75 80

Asp Lys Leu Pro Glu Cys Glu Ala Val Cys Gly Lys Pro Lys Asn Pro
 85 90 95

Ala Asn Pro Val Gln Arg Ile Leu Gly Gly His Leu Asp Ala Lys Gly
 100 105 110

Ser Phe Pro Trp Gln Ala Lys Met Val Ser Arg His Asn Leu Thr Thr
 115 120 125

Gly Ala Thr Leu Ile Asn Glu Gln Trp Leu Leu Thr Thr Ala Lys Asn
 130 135 140

Leu Phe Leu Asn His Ser Glu Asn Ala Thr Ala Lys Asp Ile Ala Pro
 145 150 155 160

Thr Leu Thr Leu Tyr Val Gly Lys Asn Gln Leu Val Glu Ile Glu Lys
 165 170 175

Val Val Leu Tyr Pro Asn Tyr Ser Gln Val Asp Ile Gly Leu Ile Lys
 180 185 190

Leu Lys Asp Lys Val Pro Val Asn Glu Arg Val Met Pro Ile Cys Leu
 195 200 205

Pro Ser Lys Asp Tyr Ala Glu Val Gly Arg Val Gly Tyr Val Ser Gly
 210 215 220

Trp Gly Arg Asn Ala Asn Phe Lys Phe Thr Asp His Leu Lys Tyr Val
 225 230 235 240

Met Leu Pro Val Ala Asp Gln Tyr Gln Cys Val Lys His Tyr Glu Gly
 245 250 255

Ser Thr Val Pro Glu Lys Lys Thr Pro Lys Ser Pro Val Gly Gln Gln
 260 265 270

Pro Ile Leu Asn Glu His Thr Phe Cys Ala Gly Met Ser Lys Tyr Gln
 275 280 285

Glu Asp Thr Cys Tyr Gly Asp Ala Gly Ser Ala Phe Ala Val His Asp
 290 295 300

Leu Glu Glu Asp Thr Trp Tyr Ala Ala Gly Ile Leu Ser Phe Asp Lys
 305 310 315 320

Ser Cys Gly Val Ala Glu Tyr Gly Val Tyr Val Lys Ala Thr Ser Ile
 325 330 335

Gln Asp Trp Val Gln Lys Thr Ile Ala Glu Asn
 340 345

<210> 4
 <211> 347
 <212> PRT
 <213> Mus caroli

<400> 4

Met Arg Ala Leu Gly Ala Val Val Thr Leu Leu Leu Trp Gly Gln Leu
 1 5 10 15

Phe Ala Val Glu Leu Gly Asn Asp Ala Met Asp Phe Glu Asp Asp Ser
 20 25 30

Cys Pro Lys Pro Pro Glu Ile Ala Asn Gly Tyr Val Glu His Leu Val
 35 40 45

Arg Tyr Arg Cys Arg Gln Phe Tyr Arg Leu Arg Ala Glu Gly Asp Gly
 50 55 60

Val Tyr Thr Leu Asn Asp Glu Lys Gln Trp Met Asn Thr Val Ala Gly
 65 70 75 80

Glu Lys Leu Pro Glu Cys Glu Ala Val Cys Gly Lys Pro Lys His Pro
 85 90 95

Val Asp Gln Val Gln Arg Ile Ile Gly Gly Ser Met Asp Ala Lys Gly
 100 105 110

Ser Phe Pro Trp Gln Ala Lys Met Ile Ser Arg His Gly Leu Thr Thr
 115 120 125

Gly Ala Thr Leu Ile Ser Asp Gln Trp Leu Leu Thr Thr Ala Lys Asn
 130 135 140

Leu Phe Leu Asn His Ser Glu Thr Ala Ser Gly Lys Asp Ile Ala Pro
 145 150 155 160

Thr Leu Thr Leu Tyr Val Gly Lys Asn Gln Leu Val Glu Ile Glu Lys
 165 170 175

Val Ile Leu His Pro Asn His Ser Val Val Asp Ile Gly Leu Ile Lys
 180 185 190

Leu Lys Gln Arg Val Leu Val Thr Glu Arg Val Met Pro Ile Cys Leu
 195 200 205

Pro Ser Lys Asp Tyr Val Ala Pro Gly Arg Val Gly Tyr Val Ser Gly
 210 215 220

Trp Gly Arg Asn Gln Asp Phe Arg Phe Thr Asp Arg Leu Lys Tyr Val
 225 230 235 240

Met Leu Pro Val Ala Asp Gln Asp Lys Cys Val Val His Tyr Glu Lys
 245 250 255

Ser Thr Val Pro Glu Lys Lys Asn Phe Thr Ser Pro Val Gly Val Gln
 260 265 270

Pro Ile Leu Asn Glu His Thr Phe Cys Ala Gly Leu Thr Lys Tyr Glu
 275 280 285

Glu Asp Thr Cys Tyr Gly Asp Ala Gly Ser Ala Phe Ala Ile His Asp
 290 295 300

Met Glu Glu Asp Thr Trp Tyr Ala Ala Gly Ile Leu Ser Phe Asp Lys
 305 310 315 320

Ser Cys Ala Val Ala Glu Tyr Gly Val Tyr Val Arg Ala Thr Asp Leu
 325 330 335

Lys Asp Trp Val Gln Glu Thr Met Ala Lys Asn
 340 345

<210> 5
 <211> 347
 <212> PRT
 <213> Mus musculus

<400> 5

Met Arg Ala Leu Gly Ala Val Val Thr Leu Leu Leu Trp Gly Gln Leu
 1 5 10 15

Phe Ala Val Glu Leu Gly Asn Asp Ala Met Asp Phe Glu Asp Asp Ser
 20 25 30

Cys Pro Lys Pro Pro Glu Ile Ala Asn Gly Tyr Val Glu His Leu Val
 35 40 45

Arg Tyr Arg Cys Arg Gln Phe Tyr Arg Leu Arg Ala Glu Gly Asp Gly
 50 55 60

Val Tyr Thr Leu Asn Asp Glu Lys Gln Trp Val Asn Thr Val Ala Gly
 65 70 75 80

Glu Lys Leu Pro Glu Cys Glu Ala Val Cys Gly Lys Pro Lys His Pro
 85 90 95

Val Asp Gln Val Gln Arg Ile Ile Gly Gly Ser Met Asp Ala Lys Gly
 100 105 110

Ser Phe Pro Trp Gln Ala Lys Met Ile Ser Arg His Gly Leu Thr Thr
 115 120 125

Gly Ala Thr Leu Ile Ser Asp Gln Trp Leu Leu Thr Thr Ala Lys Asn
 130 135 140

Leu Phe Leu Asn His Ser Glu Thr Ala Ser Ala Lys Asp Ile Thr Pro
 145 150 155 160
 Thr Leu Thr Leu Tyr Val Gly Lys Asn Gln Leu Val Glu Ile Glu Lys
 165 170 175
 Val Val Leu His Pro Asn His Ser Val Val Asp Ile Gly Leu Ile Lys
 180 185 190
 Leu Lys Gln Arg Val Leu Val Thr Glu Arg Val Met Pro Ile Cys Leu
 195 200 205
 Pro Ser Lys Asp Tyr Ile Ala Pro Gly Arg Val Gly Tyr Val Ser Gly
 210 215 220
 Trp Gly Arg Asn Ala Asn Phe Arg Phe Thr Asp Arg Leu Lys Tyr Val
 225 230 235 240
 Met Leu Pro Val Ala Asp Gln Asp Lys Cys Val Val His Tyr Glu Asn
 245 250 255
 Ser Thr Val Pro Glu Lys Lys Asn Leu Thr Ser Pro Val Gly Val Gln
 260 265 270
 Pro Ile Leu Asn Glu His Thr Phe Cys Ala Gly Leu Thr Lys Tyr Gln
 275 280 285
 Glu Asp Thr Cys Tyr Gly Asp Ala Gly Ser Ala Phe Ala Ile His Asp
 290 295 300
 Met Glu Glu Asp Thr Trp Tyr Ala Ala Gly Ile Leu Ser Phe Asp Lys
 305 310 315 320
 Ser Cys Ala Val Ala Glu Tyr Gly Val Tyr Val Arg Ala Thr Asp Leu
 325 330 335
 Lys Asp Trp Val Gln Glu Thr Met Ala Lys Asn
 340 345
 <210> 6
 <211> 347
 <212> PRT
 <213> Mus saxicola

<220>
 <221> misc_feature
 <222> (311)..(311)
 <223> Xaa is unknown

<400> 6

Met Arg Ala Leu Gly Ala Val Val Thr Leu Leu Leu Trp Gly Gln Leu
 1 5 10 15

Phe Ala Ala Glu Leu Gly Asn Asp Ala Met Asp Phe Glu Asp Asp Ser
 20 25 30

Cys Pro Lys Pro Pro Glu Ile Ala Asn Gly Tyr Val Glu His Leu Val
 35 40 45

Arg Tyr Arg Cys Arg Gln Phe Tyr Arg Leu Arg Thr Glu Gly Asp Gly
 50 55 60

Val Tyr Thr Leu Asn Asp Glu Lys Gln Trp Val Asn Thr Ala Ala Gly
 65 70 75 80

Glu Lys Leu Pro Glu Cys Glu Ala Val Cys Gly Lys Pro Lys His Pro
 85 90 95

Val Val Gln Val Gln Arg Ile Ile Gly Gly Ser Met Asp Ala Lys Gly
 100 105 110

Ser Phe Pro Trp Gln Ala Lys Met Ile Ser Arg His Gly Leu Thr Thr
 115 120 125

Gly Ala Thr Leu Ile Ser Asp Gln Trp Leu Leu Thr Thr Ala Lys Asn
 130 135 140

Leu Phe Leu Asn His Ser Glu Thr Ala Ser Ala Lys Asp Ile Ala Pro
 145 150 155 160

Thr Leu Thr Leu Tyr Val Gly Lys Asn Gln Leu Val Glu Ile Glu Lys
 165 170 175

Val Val Leu His Pro Asn His Ser Val Val Asp Ile Gly Leu Ile Lys
 180 185 190

Leu Lys Gln Arg Val Leu Val Thr Glu Arg Val Met Pro Ile Cys Leu
 195 200 205

Pro Ser Lys Asp Tyr Val Ala Pro Gly Arg Val Gly Tyr Leu Ser Gly
 210 215 220

Trp Gly Arg Asn Val Asn Phe Arg Phe Thr Glu Arg Phe Lys Tyr Val
 225 230 235 240

Met Leu Pro Val Ala Asp Gln Asp Lys Cys Val Val His Tyr Glu Asn
 245 250 255

Ser Thr Val Pro Glu Lys Lys Asn Phe Thr Ser Pro Val Gly Val Gln
 260 265 270

Pro Ile Leu Asn Glu His Thr Phe Cys Val Gly Leu Ser Arg Tyr Gln
 275 280 285

Glu Asp Thr Cys Tyr Gly Asp Ala Gly Ser Ala Phe Ala Ile His Asp
 290 295 300

Met Glu Glu Asp Thr Trp Xaa Ala Ala Gly Ile Leu Ser Phe Asp Lys
 305 310 315 320

Ser Cys Ala Val Ala Glu Tyr Gly Val Tyr Val Arg Ala Thr Asp Leu
 325 330 335

Lys Asp Trp Val Gln Glu Thr Met Ala Lys Lys
 340 345

<210> 7
 <211> 347
 <212> PRT
 <213> Rattus norvegicus

<400> 7

Met Arg Ala Leu Gly Ala Val Val Thr Leu Leu Leu Trp Gly Gln Leu
 1 5 10 15

Phe Ala Val Glu Leu Gly Asn Asp Ala Thr Asp Ile Glu Asp Asp Ser
 20 25 30

Cys Pro Lys Pro Pro Glu Ile Ala Asn Gly Tyr Val Glu His Leu Val
 35 40 45

Arg Tyr Arg Cys Arg Gln Phe Tyr Lys Leu Gln Thr Glu Gly Asp Gly

| | | | | |
|---|-----|----|-----|---------|
| 50 | | 55 | | 60 |
| Ile Tyr Thr Leu Asn Ser Glu Lys Gln Trp Val Asn Pro Ala Ala Gly | | | | |
| 65 | | 70 | | 75 80 |
| Asp Lys Leu Pro Lys Cys Glu Ala Val Cys Gly Lys Pro Lys His Pro | | | | |
| | 85 | | 90 | 95 |
| Val Asp Gln Val Gln Arg Ile Ile Gly Gly Ser Met Asp Ala Lys Gly | | | | |
| | 100 | | 105 | 110 |
| Ser Phe Pro Trp Gln Ala Lys Met Ile Ser Arg His Gly Leu Thr Thr | | | | |
| | 115 | | 120 | 125 |
| Gly Ala Thr Leu Ile Ser Asp Gln Trp Leu Leu Thr Thr Ala Gln Asn | | | | |
| | 130 | | 135 | 140 |
| Leu Phe Leu Asn His Ser Glu Asn Ala Thr Ala Lys Asp Ile Ala Pro | | | | |
| | 145 | | 150 | 155 160 |
| Thr Leu Thr Leu Tyr Val Gly Lys Asn Gln Leu Val Glu Ile Glu Lys | | | | |
| | 165 | | 170 | 175 |
| Val Val Leu His Pro Glu Arg Ser Val Val Asp Ile Gly Leu Ile Lys | | | | |
| | 180 | | 185 | 190 |
| Leu Lys Gln Lys Val Leu Val Thr Glu Lys Val Met Pro Ile Cys Leu | | | | |
| | 195 | | 200 | 205 |
| Pro Ser Lys Asp Tyr Val Ala Pro Gly Arg Met Gly Tyr Val Ser Gly | | | | |
| | 210 | | 215 | 220 |
| Trp Gly Arg Asn Val Asn Phe Arg Phe Thr Glu Arg Leu Lys Tyr Val | | | | |
| | 225 | | 230 | 235 240 |
| Met Leu Pro Val Ala Asp Gln Glu Lys Cys Glu Leu His Tyr Glu Lys | | | | |
| | 245 | | 250 | 255 |
| Ser Thr Val Pro Glu Lys Lys Gly Ala Val Thr Pro Val Gly Val Gln | | | | |
| | 260 | | 265 | 270 |
| Pro Ile Leu Asn Lys His Thr Phe Cys Ala Gly Leu Thr Lys Tyr Glu | | | | |
| | 275 | | 280 | 285 |

Glu Asp Thr Cys Tyr Gly Asp Ala Gly Ser Ala Phe Ala Val His Asp
290 295 300

Thr Glu Glu Asp Thr Trp Tyr Ala Ala Gly Ile Leu Ser Phe Asp Lys
305 310 315 320

Ser Cys Ala Val Ala Glu Tyr Gly Val Tyr Val Lys Ala Thr Asp Leu
325 330 335

Lys Asp Trp Val Gln Glu Thr Met Ala Lys Asn
340 345

<210> 8

<211> 346

<212> PRT

<213> Mesocricetus auratus

<400> 8

Met Arg Ala Leu Gly Ala Val Val Thr Leu Leu Leu Trp Gly Gln Leu
1 5 10 15

Phe Ala Val Asp Leu Ser Asn Asp Ala Met Asp Thr Ala Asp Asp Ser
20 25 30

Cys Pro Lys Pro Pro Glu Ile Glu Asn Gly Tyr Val Glu His Leu Val
35 40 45

Arg Tyr Arg Cys Gln His Tyr Arg Leu Arg Thr Glu Gly Asp Gly Val
50 55 60

Tyr Thr Leu Asn Ser Glu Lys Gln Trp Val Asn Thr Ala Ala Gly Glu
65 70 75 80

Arg Leu Pro Glu Cys Glu Ala Val Cys Gly Lys Pro Lys His Pro Val
85 90 95

Asp Gln Val Gln Arg Ile Ile Gly Gly Ser Leu Asp Ala Lys Gly Ser
100 105 110

Phe Pro Trp Gln Ala Lys Met Val Ser Arg His Glu Leu Ile Thr Gly
115 120 125

Ala Thr Leu Ile Ser Asp Gln Trp Leu Leu Thr Thr Ala Lys Asn Leu
130 135 140

Phe Leu Asn His Ser Glu Asp Ala Thr Ser Lys Asp Ile Ala Pro Thr
 145 150 155 160

Leu Lys Leu Tyr Val Gly Lys Met Gln Pro Val Glu Ile Glu Lys Val
 165 170 175

Val Ile His Pro Asn Arg Ser Val Val Asp Ile Gly Val Ile Lys Leu
 180 185 190

Arg Gln Lys Val Pro Val Asn Glu Arg Val Met Pro Ile Cys Leu Pro
 195 200 205

Ser Lys Asp Tyr Ile Ala Pro Gly Arg Met Gly Tyr Val Ser Gly Trp
 210 215 220

Gly Arg Asn Ala Asn Phe Arg Phe Thr Asp Arg Leu Lys Tyr Val Met
 225 230 235 240

Leu Pro Val Ala Asp Gln Asp Ser Cys Met Leu His Tyr Glu Gly Ser
 245 250 255

Thr Val Pro Glu Lys Glu Gly Ser Lys Ser Ser Val Gly Val Gln Pro
 260 265 270

Ile Leu Asn Glu His Thr Phe Cys Ala Gly Met Thr Lys Tyr Gln Glu
 275 280 285

Asp Thr Cys Tyr Gly Asp Ala Gly Ser Ala Phe Ala Ile His Asp Leu
 290 295 300

Glu Gln Asp Thr Trp Tyr Ala Ala Gly Ile Leu Ser Phe Asp Lys Ser
 305 310 315 320

Cys Ser Val Ala Glu Tyr Gly Val Tyr Val Lys Val Asn Ser Phe Leu
 325 330 335

Asp Trp Ile Gln Glu Thr Met Ala Lys Asn
 340 345

<210> 9
 <211> 329
 <212> PRT
 <213> Canis familiaris

<400> 9

Glu Asp Thr Gly Ser Glu Ala Thr Asn Asn Thr Glu Val Ser Leu Pro
 1 5 10 15

Lys Pro Pro Val Ile Glu Asn Gly Tyr Val Glu His Met Ile Arg Tyr
 20 25 30

Gln Cys Lys Pro Phe Tyr Lys Leu His Thr Glu Gly Asp Gly Val Tyr
 35 40 45

Thr Leu Asn Ser Glu Lys His Trp Thr Asn Lys Ala Val Gly Glu Lys
 50 55 60

Leu Pro Glu Cys Glu Ala Val Cys Gly Lys Pro Lys Asn Pro Val Asp
 65 70 75 80

Gln Val Gln Arg Ile Met Gly Gly Ser Val Asp Ala Lys Gly Ser Phe
 85 90 95

Pro Trp Gln Ala Lys Met Val Ser His His Asn Leu Thr Ser Gly Ala
 100 105 110

Thr Leu Ile Asn Glu Gln Trp Leu Leu Thr Thr Ala Lys Asn Leu Phe
 115 120 125

Leu Gly His Lys Asp Asp Ala Lys Ala Asn Asp Ile Ala Pro Thr Leu
 130 135 140

Lys Leu Tyr Val Gly Lys Asn Gln Leu Val Glu Val Glu Lys Val Val
 145 150 155 160

Leu His Pro Asp Tyr Ser Lys Val Asp Ile Gly Leu Ile Lys Leu Lys
 165 170 175

Gln Lys Val Pro Ile Asp Glu Arg Val Met Pro Ile Cys Leu Pro Ser
 180 185 190

Lys Asp Tyr Ala Glu Val Gly Arg Ile Gly Tyr Val Ser Gly Trp Gly
 195 200 205

Arg Asn Ser Asn Phe Asn Phe Thr Glu Leu Leu Lys Tyr Val Met Leu
 210 215 220

Pro Val Ala Asp Gln Asp Lys Cys Val Gln His Tyr Glu Gly Ser Thr
225 230 235 240

Val Pro Glu Lys Lys Ser Pro Lys Ser Pro Val Gly Val Gln Pro Ile
245 250 255

Leu Asn Glu His Thr Phe Cys Ala Gly Met Ser Lys Phe Gln Glu Asp
260 265 270

Thr Cys Tyr Gly Asp Ala Gly Ser Ala Phe Ala Val His Asp Gln Asp
275 280 285

Glu Asp Thr Trp Tyr Ala Ala Gly Ile Leu Ser Phe Asp Lys Ser Cys
290 295 300

Thr Val Ala Glu Tyr Gly Val Tyr Val Lys Val Pro Ser Val Leu Ala
305 310 315 320

Trp Val Gln Glu Thr Ile Ala Gly Asn
325

<210> 10

<211> 1116

<212> PRT

<213> Homo sapiens

<400> 10

Met Val Leu Leu Glu Asp Ser Gly Ser Ala Asp Phe Arg Arg His Phe
1 5 10 15

Val Asn Leu Ser Pro Phe Thr Ile Thr Val Val Leu Leu Leu Ser Ala
20 25 30

Cys Phe Val Thr Ser Ser Leu Gly Gly Thr Asp Lys Glu Leu Arg Leu
35 40 45

Val Asp Gly Glu Asn Lys Cys Ser Gly Arg Val Glu Val Lys Val Gln
50 55 60

Glu Glu Trp Gly Thr Val Cys Asn Asn Gly Trp Ser Met Glu Ala Val
65 70 75 80

Ser Val Ile Cys Asn Gln Leu Gly Cys Pro Thr Ala Ile Lys Ala Pro
85 90 95

Gly Trp Ala Asn Ser Ser Ala Gly Ser Gly Arg Ile Trp Met Asp His
 100 105 110

Val Ser Cys Arg Gly Asn Glu Ser Ala Leu Trp Asp Cys Lys His Asp
 115 120 125

Gly Trp Gly Lys His Ser Asn Cys Thr His Gln Gln Asp Ala Gly Val
 130 135 140

Thr Cys Ser Asp Gly Ser Asn Leu Glu Met Arg Leu Thr Arg Gly Gly
 145 150 155 160

Asn Met Cys Ser Gly Arg Ile Glu Ile Lys Phe Gln Gly Arg Trp Gly
 165 170 175

Thr Val Cys Asp Asp Asn Phe Asn Ile Asp His Ala Ser Val Ile Cys
 180 185 190

Arg Gln Leu Glu Cys Gly Ser Ala Val Ser Phe Ser Gly Ser Ser Asn
 195 200 205

Phe Gly Glu Gly Ser Gly Pro Ile Trp Phe Asp Asp Leu Ile Cys Asn
 210 215 220

Gly Asn Glu Ser Ala Leu Trp Asn Cys Lys His Gln Gly Trp Gly Lys
 225 230 235 240

His Asn Cys Asp His Ala Glu Asp Ala Gly Val Ile Cys Ser Lys Gly
 245 250 255

Ala Asp Leu Ser Leu Arg Leu Val Asp Gly Val Thr Glu Cys Ser Gly
 260 265 270

Arg Leu Glu Val Arg Phe Gln Gly Glu Trp Gly Thr Ile Cys Asp Asp
 275 280 285

Gly Trp Asp Ser Tyr Asp Ala Ala Val Ala Cys Lys Gln Leu Gly Cys
 290 295 300

Pro Thr Ala Val Thr Ala Ile Gly Arg Val Asn Ala Ser Lys Gly Phe
 305 310 315 320

Gly His Ile Trp Leu Asp Ser Val Ser Cys Gln Gly His Glu Pro Ala
 325 330 335

Val Trp Gln Cys Lys His His Glu Trp Gly Lys His Tyr Cys Asn His
 340 345 350

Asn Glu Asp Ala Gly Val Thr Cys Ser Asp Gly Ser Asp Leu Glu Leu
 355 360 365

Arg Leu Arg Gly Gly Gly Ser Arg Cys Ala Gly Thr Val Glu Val Glu
 370 375 380

Ile Gln Arg Leu Leu Gly Lys Val Cys Asp Arg Gly Trp Gly Leu Lys
 385 390 395 400

Glu Ala Asp Val Val Cys Arg Gln Leu Gly Cys Gly Ser Ala Leu Lys
 405 410 415

Thr Ser Tyr Gln Val Tyr Ser Lys Ile Gln Ala Thr Asn Thr Trp Leu
 420 425 430

Phe Leu Ser Ser Cys Asn Gly Asn Glu Thr Ser Leu Trp Asp Cys Lys
 435 440 445

Asn Trp Gln Trp Gly Gly Leu Thr Cys Asp His Tyr Glu Glu Ala Lys
 450 455 460

Ile Thr Cys Ser Ala His Arg Glu Pro Arg Leu Val Gly Gly Asp Ile
 465 470 475 480

Pro Cys Ser Gly Arg Val Glu Val Lys His Gly Asp Thr Trp Gly Ser
 485 490 495

Ile Cys Asp Ser Asp Phe Ser Leu Glu Ala Ala Ser Val Leu Cys Arg
 500 505 510

Glu Leu Gln Cys Gly Thr Val Val Ser Ile Leu Gly Gly Ala His Phe
 515 520 525

Gly Glu Gly Asn Gly Gln Ile Trp Ala Glu Glu Phe Gln Cys Glu Gly
 530 535 540

His Glu Ser His Leu Ser Leu Cys Pro Val Ala Pro Arg Pro Glu Gly
 545 550 555 560

Gly Lys Glu Ser Arg Ile Trp Gln Cys His Ser His Gly Trp Gly Gln
 785 790 795 800
 Gln Asn Cys Arg His Lys Glu Asp Ala Gly Val Ile Cys Ser Glu Phe
 805 810 815
 Met Ser Leu Arg Leu Thr Ser Glu Ala Ser Arg Glu Ala Cys Ala Gly
 820 825 830
 Arg Leu Glu Val Phe Tyr Asn Gly Ala Trp Gly Thr Val Gly Lys Ser
 835 840 845
 Ser Met Ser Glu Thr Thr Val Gly Val Val Cys Arg Gln Leu Gly Cys
 850 855 860
 Ala Asp Lys Gly Lys Ile Asn Pro Ala Ser Leu Asp Lys Ala Met Ser
 865 870 875 880
 Ile Pro Met Trp Val Asp Asn Val Gln Cys Pro Lys Gly Pro Asp Thr
 885 890 895
 Leu Trp Gln Cys Pro Ser Ser Pro Trp Glu Lys Arg Leu Ala Ser Pro
 900 905 910
 Ser Glu Glu Thr Trp Ile Thr Cys Asp Asn Lys Ile Arg Leu Gln Glu
 915 920 925
 Gly Pro Thr Ser Cys Ser Gly Arg Val Glu Ile Trp His Gly Gly Ser
 930 935 940
 Trp Gly Thr Val Cys Asp Asp Ser Trp Asp Leu Asp Asp Ala Gln Val
 945 950 955 960
 Val Cys Gln Gln Leu Gly Cys Gly Pro Ala Leu Lys Ala Phe Lys Glu
 965 970 975
 Ala Glu Phe Gly Gln Gly Thr Gly Pro Ile Trp Leu Asn Glu Val Lys
 980 985 990
 Cys Lys Gly Asn Glu Ser Ser Leu Trp Asp Cys Pro Ala Arg Arg Trp
 995 1000 1005
 Gly His Ser Glu Cys Gly His Lys Glu Asp Ala Ala Val Asn Cys
 1010 1015 1020

Thr Asp Ile Ser Val Gln Lys Thr Pro Gln Lys Ala Thr Thr Gly
 1025 1030 1035

Arg Ser Ser Arg Gln Ser Ser Phe Ile Ala Val Gly Ile Leu Gly
 1040 1045 1050

Val Val Leu Leu Ala Ile Phe Val Ala Leu Phe Phe Leu Thr Lys
 1055 1060 1065

Lys Arg Arg Gln Arg Gln Arg Leu Ala Val Ser Ser Arg Gly Glu
 1070 1075 1080

Asn Leu Val His Gln Ile Gln Tyr Arg Glu Met Asn Ser Cys Leu
 1085 1090 1095

Asn Ala Asp Asp Leu Asp Leu Met Asn Ser Ser Gly Gly His Ser
 1100 1105 1110

Glu Pro His
 1115

<210> 11
 <211> 1149
 <212> PRT
 <213> Homo sapiens

<400> 11

Met Val Leu Leu Glu Asp Ser Gly Ser Ala Asp Phe Arg Arg His Phe
 1 5 10 15

Val Asn Leu Ser Pro Phe Thr Ile Thr Val Val Leu Leu Leu Ser Ala
 20 25 30

Cys Phe Val Thr Ser Ser Leu Gly Gly Thr Asp Lys Glu Leu Arg Leu
 35 40 45

Val Asp Gly Glu Asn Lys Cys Ser Gly Arg Val Glu Val Lys Val Gln
 50 55 60

Glu Glu Trp Gly Thr Val Cys Asn Asn Gly Trp Ser Met Glu Ala Val
 65 70 75 80

Ser Val Ile Cys Asn Gln Leu Gly Cys Pro Thr Ala Ile Lys Ala Pro

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Gly | Trp | Ala | Asn | Ser | Ser | Ala | Gly | Ser | Gly | Arg | Ile | Trp | Met | Asp | His |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Val | Ser | Cys | Arg | Gly | Asn | Glu | Ser | Ala | Leu | Trp | Asp | Cys | Lys | His | Asp |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Gly | Trp | Gly | Lys | His | Ser | Asn | Cys | Thr | His | Gln | Gln | Asp | Ala | Gly | Val |
| | | 130 | | | | 135 | | | | | | 140 | | | |
| Thr | Cys | Ser | Asp | Gly | Ser | Asn | Leu | Glu | Met | Arg | Leu | Thr | Arg | Gly | Gly |
| 145 | | | | | | 150 | | | | 155 | | | | | 160 |
| Asn | Met | Cys | Ser | Gly | Arg | Ile | Glu | Ile | Lys | Phe | Gln | Gly | Arg | Trp | Gly |
| | | | | 165 | | | | | 170 | | | | | | 175 |
| Thr | Val | Cys | Asp | Asp | Asn | Phe | Asn | Ile | Asp | His | Ala | Ser | Val | Ile | Cys |
| | | | 180 | | | | | 185 | | | | | | 190 | |
| Arg | Gln | Leu | Glu | Cys | Gly | Ser | Ala | Val | Ser | Phe | Ser | Gly | Ser | Ser | Asn |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Phe | Gly | Glu | Gly | Ser | Gly | Pro | Ile | Trp | Phe | Asp | Asp | Leu | Ile | Cys | Asn |
| 210 | | | | | | 215 | | | | | 220 | | | | |
| Gly | Asn | Glu | Ser | Ala | Leu | Trp | Asn | Cys | Lys | His | Gln | Gly | Trp | Gly | Lys |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| His | Asn | Cys | Asp | His | Ala | Glu | Asp | Ala | Gly | Val | Ile | Cys | Ser | Lys | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ala | Asp | Leu | Ser | Leu | Arg | Leu | Val | Asp | Gly | Val | Thr | Glu | Cys | Ser | Gly |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Arg | Leu | Glu | Val | Arg | Phe | Gln | Gly | Glu | Trp | Gly | Thr | Ile | Cys | Asp | Asp |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Gly | Trp | Asp | Ser | Tyr | Asp | Ala | Ala | Val | Ala | Cys | Lys | Gln | Leu | Gly | Cys |
| 290 | | | | | | 295 | | | | | 300 | | | | |
| Pro | Thr | Ala | Val | Thr | Ala | Ile | Gly | Arg | Val | Asn | Ala | Ser | Lys | Gly | Phe |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |

Gly His Ile Trp Leu Asp Ser Val Ser Cys Gln Gly His Glu Pro Ala
 325 330 335
 Val Trp Gln Cys Lys His His Glu Trp Gly Lys His Tyr Cys Asn His
 340 345 350
 Asn Glu Asp Ala Gly Val Thr Cys Ser Asp Gly Ser Asp Leu Glu Leu
 355 360 365
 Arg Leu Arg Gly Gly Gly Ser Arg Cys Ala Gly Thr Val Glu Val Glu
 370 375 380
 Ile Gln Arg Leu Leu Gly Lys Val Cys Asp Arg Gly Trp Gly Leu Lys
 385 390 395 400
 Glu Ala Asp Val Val Cys Arg Gln Leu Gly Cys Gly Ser Ala Leu Lys
 405 410 415
 Thr Ser Tyr Gln Val Tyr Ser Lys Ile Gln Ala Thr Asn Thr Trp Leu
 420 425 430
 Phe Leu Ser Ser Cys Asn Gly Asn Glu Thr Ser Leu Trp Asp Cys Lys
 435 440 445
 Asn Trp Gln Trp Gly Gly Leu Thr Cys Asp His Tyr Glu Glu Ala Lys
 450 455 460
 Ile Thr Cys Ser Ala His Arg Glu Pro Arg Leu Val Gly Gly Asp Ile
 465 470 475 480
 Pro Cys Ser Gly Arg Val Glu Val Lys His Gly Asp Thr Trp Gly Ser
 485 490 495
 Ile Cys Asp Ser Asp Phe Ser Leu Glu Ala Ala Ser Val Leu Cys Arg
 500 505 510
 Glu Leu Gln Cys Gly Thr Val Val Ser Ile Leu Gly Gly Ala His Phe
 515 520 525
 Gly Glu Gly Asn Gly Gln Ile Trp Ala Glu Glu Phe Gln Cys Glu Gly
 530 535 540
 His Glu Ser His Leu Ser Leu Cys Pro Val Ala Pro Arg Pro Glu Gly

| | | | | | | |
|-----------------|---|-----|-----|-----|--|-----|
| 545 | | 550 | | 555 | | 560 |
| Thr Cys Ser His | Ser Arg Asp Val Gly Val Val Cys Ser Ser Lys Thr | | | | | |
| | 565 | | 570 | | | 575 |
| Gln Lys Thr Ser | Leu Ile Gly Ser Tyr Thr Val Lys Gly Thr Gly Leu | | | | | |
| | 580 | | 585 | | | 590 |
| Gly Ser His Ser | Cys Leu Phe Leu Lys Pro Cys Leu Leu Pro Gly Tyr | | | | | |
| | 595 | | 600 | | | 605 |
| Thr Glu Ile Arg | Leu Val Asn Gly Lys Thr Pro Cys Glu Gly Arg Val | | | | | |
| | 610 | | 615 | | | 620 |
| Glu Leu Lys Thr | Leu Gly Ala Trp Gly Ser Leu Cys Asn Ser His Trp | | | | | |
| | 625 | | 630 | | | 635 |
| Asp Ile Glu Asp | Ala His Val Leu Cys Gln Gln Leu Lys Cys Gly Val | | | | | |
| | 645 | | 650 | | | 655 |
| Ala Leu Ser Thr | Pro Gly Gly Ala Arg Phe Gly Lys Gly Asn Gly Gln | | | | | |
| | 660 | | 665 | | | 670 |
| Ile Trp Arg His | Met Phe His Cys Thr Gly Thr Glu Gln His Met Gly | | | | | |
| | 675 | | 680 | | | 685 |
| Asp Cys Pro Val | Thr Ala Leu Gly Ala Ser Leu Cys Pro Ser Glu Gln | | | | | |
| | 690 | | 695 | | | 700 |
| Val Ala Ser Val | Ile Cys Ser Gly Asn Gln Ser Gln Thr Leu Ser Ser | | | | | |
| | 705 | | 710 | | | 715 |
| Cys Asn Ser Ser | Ser Leu Gly Pro Thr Arg Pro Thr Ile Pro Glu Glu | | | | | |
| | 725 | | 730 | | | 735 |
| Ser Ala Val Ala | Cys Ile Glu Ser Gly Gln Leu Arg Leu Val Asn Gly | | | | | |
| | 740 | | 745 | | | 750 |
| Gly Gly Arg Cys | Ala Gly Arg Val Glu Ile Tyr His Glu Gly Ser Trp | | | | | |
| | 755 | | 760 | | | 765 |
| Gly Thr Ile Cys | Asp Asp Ser Trp Asp Leu Ser Asp Ala His Val Val | | | | | |
| | 770 | | 775 | | | 780 |

Cys Arg Gln Leu Gly Cys Gly Glu Ala Ile Asn Ala Thr Gly Ser Ala
785 790 795 800

His Phe Gly Glu Gly Thr Gly Pro Ile Trp Leu Asp Glu Met Lys Cys
805 810 815

Asn Gly Lys Glu Ser Arg Ile Trp Gln Cys His Ser His Gly Trp Gly
820 825 830

Gln Gln Asn Cys Arg His Lys Glu Asp Ala Gly Val Ile Cys Ser Glu
835 840 845

Phe Met Ser Leu Arg Leu Thr Ser Glu Ala Ser Arg Glu Ala Cys Ala
850 855 860

Gly Arg Leu Glu Val Phe Tyr Asn Gly Ala Trp Gly Thr Val Gly Lys
865 870 875 880

Ser Ser Met Ser Glu Thr Thr Val Gly Val Val Cys Arg Gln Leu Gly
885 890 895

Cys Ala Asp Lys Gly Lys Ile Asn Pro Ala Ser Leu Asp Lys Ala Met
900 905 910

Ser Ile Pro Met Trp Val Asp Asn Val Gln Cys Pro Lys Gly Pro Asp
915 920 925

Thr Leu Trp Gln Cys Pro Ser Ser Pro Trp Glu Lys Arg Leu Ala Ser
930 935 940

Pro Ser Glu Glu Thr Trp Ile Thr Cys Asp Asn Lys Ile Arg Leu Gln
945 950 955 960

Glu Gly Pro Thr Ser Cys Ser Gly Arg Val Glu Ile Trp His Gly Gly
965 970 975

Ser Trp Gly Thr Val Cys Asp Asp Ser Trp Asp Leu Asp Asp Ala Gln
980 985 990

Val Val Cys Gln Gln Leu Gly Cys Gly Pro Ala Leu Lys Ala Phe Lys
995 1000 1005

Glu Ala Glu Phe Gly Gln Gly Thr Gly Pro Ile Trp Leu Asn Glu

| | | | | |
|---|--|------|--|-------|
| 1010 | | 1015 | | 1020 |
| Val Lys Cys Lys Gly Asn Glu Ser Ser Leu Trp Asp Cys Pro Ala | | | | |
| 1025 | | 1030 | | 1035 |
| Arg Arg Trp Gly His Ser Glu Cys Gly His Lys Glu Asp Ala Ala | | | | |
| 1040 | | 1045 | | 1050 |
| Val Asn Cys Thr Asp Ile Ser Val Gln Lys Thr Pro Gln Lys Ala | | | | |
| 1055 | | 1060 | | 1065 |
| Thr Thr Gly Arg Ser Ser Arg Gln Ser Ser Phe Ile Ala Val Gly | | | | |
| 1070 | | 1075 | | 1080 |
| Ile Leu Gly Val Val Leu Leu Ala Ile Phe Val Ala Leu Phe Phe | | | | |
| 1085 | | 1090 | | 1095 |
| Leu Thr Lys Lys Arg Arg Gln Arg Gln Arg Leu Ala Val Ser Ser | | | | |
| 1100 | | 1105 | | 1110 |
| Arg Gly Glu Asn Leu Val His Gln Ile Gln Tyr Arg Glu Met Asn | | | | |
| 1115 | | 1120 | | 1125 |
| Ser Cys Leu Asn Ala Asp Asp Leu Asp Leu Met Asn Ser Ser Gly | | | | |
| 1130 | | 1135 | | 1140 |
| Gly His Ser Glu Pro His | | | | |
| 1145 | | | | |
| <210> 12 | | | | |
| <211> 1156 | | | | |
| <212> PRT | | | | |
| <213> Homo sapiens | | | | |
| <400> 12 | | | | |
| Met Val Leu Leu Glu Asp Ser Gly Ser Ala Asp Phe Arg Arg His Phe | | | | |
| 1 | | 5 | | 10 15 |
| Val Asn Leu Ser Pro Phe Thr Ile Thr Val Val Leu Leu Leu Ser Ala | | | | |
| 20 | | 25 | | 30 |
| Cys Phe Val Thr Ser Ser Leu Gly Gly Thr Asp Lys Glu Leu Arg Leu | | | | |
| 35 | | 40 | | 45 |

Val Asp Gly Glu Asn Lys Cys Ser Gly Arg Val Glu Val Lys Val Gln
50 55 60

Glu Glu Trp Gly Thr Val Cys Asn Asn Gly Trp Ser Met Glu Ala Val
65 70 75 80

Ser Val Ile Cys Asn Gln Leu Gly Cys Pro Thr Ala Ile Lys Ala Pro
85 90 95

Gly Trp Ala Asn Ser Ser Ala Gly Ser Gly Arg Ile Trp Met Asp His
100 105 110

Val Ser Cys Arg Gly Asn Glu Ser Ala Leu Trp Asp Cys Lys His Asp
115 120 125

Gly Trp Gly Lys His Ser Asn Cys Thr His Gln Gln Asp Ala Gly Val
130 135 140

Thr Cys Ser Asp Gly Ser Asn Leu Glu Met Arg Leu Thr Arg Gly Gly
145 150 155 160

Asn Met Cys Ser Gly Arg Ile Glu Ile Lys Phe Gln Gly Arg Trp Gly
165 170 175

Thr Val Cys Asp Asp Asn Phe Asn Ile Asp His Ala Ser Val Ile Cys
180 185 190

Arg Gln Leu Glu Cys Gly Ser Ala Val Ser Phe Ser Gly Ser Ser Asn
195 200 205

Phe Gly Glu Gly Ser Gly Pro Ile Trp Phe Asp Asp Leu Ile Cys Asn
210 215 220

Gly Asn Glu Ser Ala Leu Trp Asn Cys Lys His Gln Gly Trp Gly Lys
225 230 235 240

His Asn Cys Asp His Ala Glu Asp Ala Gly Val Ile Cys Ser Lys Gly
245 250 255

Ala Asp Leu Ser Leu Arg Leu Val Asp Gly Val Thr Glu Cys Ser Gly
260 265 270

Arg Leu Glu Val Arg Phe Gln Gly Glu Trp Gly Thr Ile Cys Asp Asp
275 280 285

Gly Trp Asp Ser Tyr Asp Ala Ala Val Ala Cys Lys Gln Leu Gly Cys
 290 295 300

Pro Thr Ala Val Thr Ala Ile Gly Arg Val Asn Ala Ser Lys Gly Phe
 305 310 315 320

Gly His Ile Trp Leu Asp Ser Val Ser Cys Gln Gly His Glu Pro Ala
 325 330 335

Val Trp Gln Cys Lys His His Glu Trp Gly Lys His Tyr Cys Asn His
 340 345 350

Asn Glu Asp Ala Gly Val Thr Cys Ser Asp Gly Ser Asp Leu Glu Leu
 355 360 365

Arg Leu Arg Gly Gly Gly Ser Arg Cys Ala Gly Thr Val Glu Val Glu
 370 375 380

Ile Gln Arg Leu Leu Gly Lys Val Cys Asp Arg Gly Trp Gly Leu Lys
 385 390 395 400

Glu Ala Asp Val Val Cys Arg Gln Leu Gly Cys Gly Ser Ala Leu Lys
 405 410 415

Thr Ser Tyr Gln Val Tyr Ser Lys Ile Gln Ala Thr Asn Thr Trp Leu
 420 425 430

Phe Leu Ser Ser Cys Asn Gly Asn Glu Thr Ser Leu Trp Asp Cys Lys
 435 440 445

Asn Trp Gln Trp Gly Gly Leu Thr Cys Asp His Tyr Glu Glu Ala Lys
 450 455 460

Ile Thr Cys Ser Ala His Arg Glu Pro Arg Leu Val Gly Gly Asp Ile
 465 470 475 480

Pro Cys Ser Gly Arg Val Glu Val Lys His Gly Asp Thr Trp Gly Ser
 485 490 495

Ile Cys Asp Ser Asp Phe Ser Leu Glu Ala Ala Ser Val Leu Cys Arg
 500 505 510

Glu Leu Gln Cys Gly Thr Val Val Ser Ile Leu Gly Gly Ala His Phe
 515 520 525

Gly Glu Gly Asn Gly Gln Ile Trp Ala Glu Glu Phe Gln Cys Glu Gly
 530 535 540

His Glu Ser His Leu Ser Leu Cys Pro Val Ala Pro Arg Pro Glu Gly
 545 550 555 560

Thr Cys Ser His Ser Arg Asp Val Gly Val Val Cys Ser Arg Tyr Thr
 565 570 575

Glu Ile Arg Leu Val Asn Gly Lys Thr Pro Cys Glu Gly Arg Val Glu
 580 585 590

Leu Lys Thr Leu Gly Ala Trp Gly Ser Leu Cys Asn Ser His Trp Asp
 595 600 605

Ile Glu Asp Ala His Val Leu Cys Gln Gln Leu Lys Cys Gly Val Ala
 610 615 620

Leu Ser Thr Pro Gly Gly Ala Arg Phe Gly Lys Gly Asn Gly Gln Ile
 625 630 635 640

Trp Arg His Met Phe His Cys Thr Gly Thr Glu Gln His Met Gly Asp
 645 650 655

Cys Pro Val Thr Ala Leu Gly Ala Ser Leu Cys Pro Ser Glu Gln Val
 660 665 670

Ala Ser Val Ile Cys Ser Gly Asn Gln Ser Gln Thr Leu Ser Ser Cys
 675 680 685

Asn Ser Ser Ser Leu Gly Pro Thr Arg Pro Thr Ile Pro Glu Glu Ser
 690 695 700

Ala Val Ala Cys Ile Glu Ser Gly Gln Leu Arg Leu Val Asn Gly Gly
 705 710 715 720

Gly Arg Cys Ala Gly Arg Val Glu Ile Tyr His Glu Gly Ser Trp Gly
 725 730 735

Thr Ile Cys Asp Asp Ser Trp Asp Leu Ser Asp Ala His Val Val Cys
 740 745 750

Arg Gln Leu Gly Cys Gly Glu Ala Ile Asn Ala Thr Gly Ser Ala His
 755 760 765
 Phe Gly Glu Gly Thr Gly Pro Ile Trp Leu Asp Glu Met Lys Cys Asn
 770 775 780
 Gly Lys Glu Ser Arg Ile Trp Gln Cys His Ser His Gly Trp Gly Gln
 785 790 795 800
 Gln Asn Cys Arg His Lys Glu Asp Ala Gly Val Ile Cys Ser Glu Phe
 805 810 815
 Met Ser Leu Arg Leu Thr Ser Glu Ala Ser Arg Glu Ala Cys Ala Gly
 820 825 830
 Arg Leu Glu Val Phe Tyr Asn Gly Ala Trp Gly Thr Val Gly Lys Ser
 835 840 845
 Ser Met Ser Glu Thr Thr Val Gly Val Val Cys Arg Gln Leu Gly Cys
 850 855 860
 Ala Asp Lys Gly Lys Ile Asn Pro Ala Ser Leu Asp Lys Ala Met Ser
 865 870 875 880
 Ile Pro Met Trp Val Asp Asn Val Gln Cys Pro Lys Gly Pro Asp Thr
 885 890 895
 Leu Trp Gln Cys Pro Ser Ser Pro Trp Glu Lys Arg Leu Ala Ser Pro
 900 905 910
 Ser Glu Glu Thr Trp Ile Thr Cys Asp Asn Lys Ile Arg Leu Gln Glu
 915 920 925
 Gly Pro Thr Ser Cys Ser Gly Arg Val Glu Ile Trp His Gly Gly Ser
 930 935 940
 Trp Gly Thr Val Cys Asp Asp Ser Trp Asp Leu Asp Asp Ala Gln Val
 945 950 955 960
 Val Cys Gln Gln Leu Gly Cys Gly Pro Ala Leu Lys Ala Phe Lys Glu
 965 970 975

Cys Lys Gly Asn Glu Ser Ser Leu Trp Asp Cys Pro Ala Arg Arg Trp
995 1000 1005

Gly His Ser Glu Cys Gly His Lys Glu Asp Ala Ala Val Asn Cys
1010 1015 1020

Thr Asp Ile Ser Val Gln Lys Thr Pro Gln Lys Ala Thr Thr Gly
1025 1030 1035

Arg Ser Ser Arg Gln Ser Ser Phe Ile Ala Val Gly Ile Leu Gly
1040 1045 1050

Val Val Leu Leu Ala Ile Phe Val Ala Leu Phe Phe Leu Thr Lys
1055 1060 1065

Lys Arg Arg Gln Arg Gln Arg Leu Ala Val Ser Ser Arg Gly Glu
1070 1075 1080

Asn Leu Val His Gln Ile Gln Tyr Arg Glu Met Asn Ser Cys Leu
1085 1090 1095

```

Asn Ala  Asp Asp  Leu Asp  Leu  Met Asn Ser  Ser Gly  Leu Trp Val
      1100                      1105          1110

```

Leu Gly Gly Ser Ile Ala Gln Gly Phe Arg Ser Val Ala Ala Val
1115 1120 1125

Glu Ala Gln Thr Phe Tyr Phe Asp Lys Gln Leu Lys Lys Ser Lys
1130 1135 1140

```

Asn Val  Ile Gly Ser Leu Asp  Ala Tyr Asn Gly Gln  Glu
    1145                      1150                      1155

```

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<210> 13
<211> 1151
<212> PRT
<213> Homo sapiens
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<400> 13

Met Val Leu Leu Glu Asp Ser Gly Ser Ala Asp Phe Arg Arg His Phe
1 5 10 15

Val Asn Leu Ser Pro Phe Thr Ile Thr Val Val Leu Leu Leu Ser Ala
 20 25 30

Cys Phe Val Thr Ser Ser Leu Gly Gly Thr Asp Lys Glu Leu Arg Leu
 35 40 45

Val Asp Gly Glu Asn Lys Cys Ser Gly Arg Val Glu Val Lys Val Gln
 50 55 60

Glu Glu Trp Gly Thr Val Cys Asn Asn Gly Trp Ser Met Glu Ala Val
 65 70 75 80

Ser Val Ile Cys Asn Gln Leu Gly Cys Pro Thr Ala Ile Lys Ala Pro
 85 90 95

Gly Trp Ala Asn Ser Ser Ala Gly Ser Gly Arg Ile Trp Met Asp His
 100 105 110

Val Ser Cys Arg Gly Asn Glu Ser Ala Leu Trp Asp Cys Lys His Asp
 115 120 125

Gly Trp Gly Lys His Ser Asn Cys Thr His Gln Gln Asp Ala Gly Val
 130 135 140

Thr Cys Ser Asp Gly Ser Asn Leu Glu Met Arg Leu Thr Arg Gly Gly
 145 150 155 160

Asn Met Cys Ser Gly Arg Ile Glu Ile Lys Phe Gln Gly Arg Trp Gly
 165 170 175

Thr Val Cys Asp Asp Asn Phe Asn Ile Asp His Ala Ser Val Ile Cys
 180 185 190

Arg Gln Leu Glu Cys Gly Ser Ala Val Ser Phe Ser Gly Ser Ser Asn
 195 200 205

Phe Gly Glu Gly Ser Gly Pro Ile Trp Phe Asp Asp Leu Ile Cys Asn
 210 215 220

Gly Asn Glu Ser Ala Leu Trp Asn Cys Lys His Gln Gly Trp Gly Lys
 225 230 235 240

His Asn Cys Asp His Ala Glu Asp Ala Gly Val Ile Cys Ser Lys Gly

| | | |
|---|-----|-----|
| 245 | 250 | 255 |
| Ala Asp Leu Ser Leu Arg Leu Val Asp Gly Val Thr Glu Cys Ser Gly | | |
| 260 | 265 | 270 |
| Arg Leu Glu Val Arg Phe Gln Gly Glu Trp Gly Thr Ile Cys Asp Asp | | |
| 275 | 280 | 285 |
| Gly Trp Asp Ser Tyr Asp Ala Ala Val Ala Cys Lys Gln Leu Gly Cys | | |
| 290 | 295 | 300 |
| Pro Thr Ala Val Thr Ala Ile Gly Arg Val Asn Ala Ser Lys Gly Phe | | |
| 305 | 310 | 315 |
| Gly His Ile Trp Leu Asp Ser Val Ser Cys Gln Gly His Glu Pro Ala | | |
| 325 | 330 | 335 |
| Val Trp Gln Cys Lys His His Glu Trp Gly Lys His Tyr Cys Asn His | | |
| 340 | 345 | 350 |
| Asn Glu Asp Ala Gly Val Thr Cys Ser Asp Gly Ser Asp Leu Glu Leu | | |
| 355 | 360 | 365 |
| Arg Leu Arg Gly Gly Gly Ser Arg Cys Ala Gly Thr Val Glu Val Glu | | |
| 370 | 375 | 380 |
| Ile Gln Arg Leu Leu Gly Lys Val Cys Asp Arg Gly Trp Gly Leu Lys | | |
| 385 | 390 | 395 |
| Glu Ala Asp Val Val Cys Arg Gln Leu Gly Cys Gly Ser Ala Leu Lys | | |
| 405 | 410 | 415 |
| Thr Ser Tyr Gln Val Tyr Ser Lys Ile Gln Ala Thr Asn Thr Trp Leu | | |
| 420 | 425 | 430 |
| Phe Leu Ser Ser Cys Asn Gly Asn Glu Thr Ser Leu Trp Asp Cys Lys | | |
| 435 | 440 | 445 |
| Asn Trp Gln Trp Gly Gly Leu Thr Cys Asp His Tyr Glu Glu Ala Lys | | |
| 450 | 455 | 460 |
| Ile Thr Cys Ser Ala His Arg Glu Pro Arg Leu Val Gly Gly Asp Ile | | |
| 465 | 470 | 475 |
| | | 480 |

Pro Cys Ser Gly Arg Val Glu Val Lys His Gly Asp Thr Trp Gly Ser
 485 490 495

Ile Cys Asp Ser Asp Phe Ser Leu Glu Ala Ala Ser Val Leu Cys Arg
 500 505 510

Glu Leu Gln Cys Gly Thr Val Val Ser Ile Leu Gly Gly Ala His Phe
 515 520 525

Gly Glu Gly Asn Gly Gln Ile Trp Ala Glu Glu Phe Gln Cys Glu Gly
 530 535 540

His Glu Ser His Leu Ser Leu Cys Pro Val Ala Pro Arg Pro Glu Gly
 545 550 555 560

Thr Cys Ser His Ser Arg Asp Val Gly Val Val Cys Ser Arg Tyr Thr
 565 570 575

Glu Ile Arg Leu Val Asn Gly Lys Thr Pro Cys Glu Gly Arg Val Glu
 580 585 590

Leu Lys Thr Leu Gly Ala Trp Gly Ser Leu Cys Asn Ser His Trp Asp
 595 600 605

Ile Glu Asp Ala His Val Leu Cys Gln Gln Leu Lys Cys Gly Val Ala
 610 615 620

Leu Ser Thr Pro Gly Gly Ala Arg Phe Gly Lys Gly Asn Gly Gln Ile
 625 630 635 640

Trp Arg His Met Phe His Cys Thr Gly Thr Glu Gln His Met Gly Asp
 645 650 655

Cys Pro Val Thr Ala Leu Gly Ala Ser Leu Cys Pro Ser Glu Gln Val
 660 665 670

Ala Ser Val Ile Cys Ser Gly Asn Gln Ser Gln Thr Leu Ser Ser Cys
 675 680 685

Asn Ser Ser Ser Leu Gly Pro Thr Arg Pro Thr Ile Pro Glu Glu Ser
 690 695 700

Ala Val Ala Cys Ile Glu Ser Gly Gln Leu Arg Leu Val Asn Gly Gly

| | | | | | | |
|---|---|-----|-----|-----|-----|-----|
| 705 | | 710 | | 715 | | 720 |
| Gly Arg Cys Ala | Gly Arg Val Glu Ile Tyr His Glu Gly Ser Trp Gly | | | | | |
| | 725 | | 730 | | | 735 |
| Thr Ile Cys Asp Asp Ser Trp Asp Leu Ser Asp Ala His Val Val Cys | | | | | | |
| | 740 | | 745 | | | 750 |
| Arg Gln Leu Gly Cys Gly Glu Ala Ile Asn Ala Thr Gly Ser Ala His | | | | | | |
| | 755 | | 760 | | | 765 |
| Phe Gly Glu Gly Thr Gly Pro Ile Trp Leu Asp Glu Met Lys Cys Asn | | | | | | |
| | 770 | | 775 | | | 780 |
| Gly Lys Glu Ser Arg Ile Trp Gln Cys His Ser His Gly Trp Gly Gln | | | | | | |
| | 785 | | 790 | | 795 | 800 |
| Gln Asn Cys Arg His Lys Glu Asp Ala Gly Val Ile Cys Ser Glu Phe | | | | | | |
| | | 805 | | 810 | | 815 |
| Met Ser Leu Arg Leu Thr Ser Glu Ala Ser Arg Glu Ala Cys Ala Gly | | | | | | |
| | | 820 | | 825 | | 830 |
| Arg Leu Glu Val Phe Tyr Asn Gly Ala Trp Gly Thr Val Gly Lys Ser | | | | | | |
| | 835 | | 840 | | | 845 |
| Ser Met Ser Glu Thr Thr Val Gly Val Val Cys Arg Gln Leu Gly Cys | | | | | | |
| | 850 | | 855 | | | 860 |
| Ala Asp Lys Gly Lys Ile Asn Pro Ala Ser Leu Asp Lys Ala Met Ser | | | | | | |
| | 865 | | 870 | | 875 | 880 |
| Ile Pro Met Trp Val Asp Asn Val Gln Cys Pro Lys Gly Pro Asp Thr | | | | | | |
| | | 885 | | 890 | | 895 |
| Leu Trp Gln Cys Pro Ser Ser Pro Trp Glu Lys Arg Leu Ala Ser Pro | | | | | | |
| | | 900 | | 905 | | 910 |
| Ser Glu Glu Thr Trp Ile Thr Cys Asp Asn Lys Ile Arg Leu Gln Glu | | | | | | |
| | 915 | | 920 | | | 925 |
| Gly Pro Thr Ser Cys Ser Gly Arg Val Glu Ile Trp His Gly Gly Ser | | | | | | |
| | 930 | | 935 | | | 940 |

Trp Gly Thr Val Cys Asp Asp Ser Trp Asp Leu Asp Asp Ala Gln Val
 945 950 955 960

Val Cys Gln Gln Leu Gly Cys Gly Pro Ala Leu Lys Ala Phe Lys Glu
 965 970 975

Ala Glu Phe Gly Gln Gly Thr Gly Pro Ile Trp Leu Asn Glu Val Lys
 980 985 990

Cys Lys Gly Asn Glu Ser Ser Leu Trp Asp Cys Pro Ala Arg Arg Trp
 995 1000 1005

Gly His Ser Glu Cys Gly His Lys Glu Asp Ala Ala Val Asn Cys
 1010 1015 1020

Thr Asp Ile Ser Val Gln Lys Thr Pro Gln Lys Ala Thr Thr Gly
 1025 1030 1035

Arg Ser Ser Arg Gln Ser Ser Phe Ile Ala Val Gly Ile Leu Gly
 1040 1045 1050

Val Val Leu Leu Ala Ile Phe Val Ala Leu Phe Phe Leu Thr Lys
 1055 1060 1065

Lys Arg Arg Gln Arg Gln Arg Leu Ala Val Ser Ser Arg Gly Glu
 1070 1075 1080

Asn Leu Val His Gln Ile Gln Tyr Arg Glu Met Asn Ser Cys Leu
 1085 1090 1095

Asn Ala Asp Asp Leu Asp Leu Met Asn Ser Ser Glu Asn Ser His
 1100 1105 1110

Glu Ser Ala Asp Phe Ser Ala Ala Glu Leu Ile Ser Val Ser Lys
 1115 1120 1125

Phe Leu Pro Ile Ser Gly Met Glu Lys Glu Ala Ile Leu Ser His
 1130 1135 1140

Thr Glu Lys Glu Asn Gly Asn Leu
 1145 1150

<211> 141
 <212> PRT
 <213> Homo sapiens

<400> 14

Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Gly Lys
 1 5 10 15

Val Gly Ala His Ala Gly Glu Tyr Gly Ala Glu Ala Leu Glu Arg Met
 20 25 30

Phe Leu Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
 35 40 45

Ser His Gly Ser Ala Gln Val Lys Gly His Gly Lys Lys Val Ala Asp
 50 55 60

Ala Leu Thr Asn Ala Val Ala His Val Asp Asp Met Pro Asn Ala Leu
 65 70 75 80

Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro Val
 85 90 95

Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Ala His
 100 105 110

Leu Pro Ala Glu Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys Phe
 115 120 125

Leu Ala Ser Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
 130 135 140

<210> 15
 <211> 146
 <212> PRT
 <213> Homo sapiens

<400> 15

Val His Leu Thr Pro Glu Glu Lys Ser Ala Val Thr Ala Leu Trp Gly
 1 5 10 15

Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu Leu
 20 25 30

Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp Leu

35

40

45

Ser Thr Pro Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His Gly
 50 55 60

Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu Ala His Leu Asp Asn
 65 70 75 80

Leu Lys Gly Thr Phe Ala Thr Leu Ser Glu Leu His Cys Asp Lys Leu
 85 90 95

His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val Cys
 100 105 110

Val Leu Ala His His Phe Gly Lys Glu Phe Thr Pro Pro Val Gln Ala
 115 120 125

Ala Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His Lys
 130 135 140

Tyr His
 145

<210> 16
 <211> 146
 <212> PRT
 <213> Homo sapiens

<400> 16

Val His Leu Thr Pro Glu Glu Lys Thr Ala Val Asn Ala Leu Trp Gly
 1 5 10 15

Lys Val Asn Val Asp Ala Val Gly Gly Glu Ala Leu Gly Arg Leu Leu
 20 25 30

Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp Leu
 35 40 45

Ser Ser Pro Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His Gly
 50 55 60

Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu Ala His Leu Asp Asn
 65 70 75 80

Leu Lys Gly Thr Phe Ser Gln Leu Ser Glu Leu His Cys Asp Lys Leu
85 90 95

His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val Cys
100 105 110

Val Leu Ala Arg Asn Phe Gly Lys Glu Phe Thr Pro Gln Met Gln Ala
115 120 125

Ala Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His Lys
130 135 140

Tyr His
145

<210> 17
<211> 146
<212> PRT
<213> Homo sapiens

<400> 17

Gly His Phe Thr Glu Glu Asp Lys Ala Thr Ile Thr Ser Leu Trp Gly
1 5 10 15

Lys Val Asn Val Glu Asp Ala Gly Gly Glu Thr Leu Gly Arg Leu Leu
20 25 30

Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Asp Ser Phe Gly Asn Leu
35 40 45

Ser Ser Ala Ser Ala Ile Met Gly Asn Pro Lys Val Lys Ala His Gly
50 55 60

Lys Lys Val Leu Thr Ser Leu Gly Asp Ala Ile Lys His Leu Asp Asp
65 70 75 80

Leu Lys Gly Thr Phe Ala Gln Leu Ser Glu Leu His Cys Asp Lys Leu
85 90 95

His Val Asp Pro Glu Asn Phe Lys Leu Leu Gly Asn Val Leu Val Thr
100 105 110

Val Leu Ala Ile His Phe Gly Lys Glu Phe Thr Pro Glu Val Gln Ala
115 120 125

Ser Trp Gln Lys Met Val Thr Ala Val Ala Ser Ala Leu Ser Ser Arg
 130 135 140

Tyr His
 145

<210> 18
 <211> 141
 <212> PRT
 <213> Homo sapiens

<400> 18

Ala Leu Ser Ala Glu Asp Arg Ala Leu Val Arg Ala Leu Trp Lys Lys
 1 5 10 15

Leu Gly Ser Asn Val Gly Val Tyr Thr Thr Glu Ala Leu Glu Arg Thr
 20 25 30

Phe Leu Ala Phe Pro Ala Thr Lys Thr Tyr Phe Ser His Leu Asp Leu
 35 40 45

Ser Pro Gly Ser Ser Gln Val Arg Ala His Gly Gln Lys Val Ala Asp
 50 55 60

Ala Leu Ser Leu Ala Val Glu Arg Leu Asp Asp Leu Pro His Ala Leu
 65 70 75 80

Ser Ala Leu Ser His Leu His Ala Cys Gln Leu Arg Val Asp Pro Ala
 85 90 95

Ser Phe Gln Leu Leu Gly His Cys Leu Leu Val Thr Leu Ala Arg His
 100 105 110

Tyr Pro Gly Asp Phe Ser Pro Ala Leu Gln Ala Ser Leu Asp Lys Phe
 115 120 125

Leu Ser His Val Ile Ser Ala Leu Val Ser Glu Tyr Arg
 130 135 140

<210> 19
 <211> 141
 <212> PRT
 <213> Homo sapiens

<400> 19

Ser Leu Thr Lys Thr Glu Arg Thr Ile Ile Val Ser Met Trp Ala Lys
 1 5 10 15
 Ile Ser Thr Gln Ala Asp Thr Ile Gly Thr Glu Thr Leu Glu Arg Leu
 20 25 30
 Phe Leu Ser His Pro Gln Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
 35 40 45
 His Pro Gly Ser Ala Gln Leu Arg Ala His Gly Ser Lys Val Val Ala
 50 55 60
 Ala Val Gly Asp Ala Val Lys Ser Ile Asp Asp Ile Gly Gly Ala Leu
 65 70 75 80
 Ser Lys Leu Ser Glu Leu His Ala Tyr Ile Leu Arg Val Asp Pro Val
 85 90 95
 Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Ala Arg
 100 105 110
 Phe Pro Ala Asp Phe Thr Ala Glu Ala His Ala Ala Trp Asp Lys Phe
 115 120 125
 Leu Ser Val Val Ser Ser Val Leu Thr Glu Lys Tyr Arg
 130 135 140
 <210> 20
 <211> 146
 <212> PRT
 <213> Homo sapiens
 <400> 20
 Val His Phe Thr Ala Glu Glu Lys Ala Ala Val Thr Ser Leu Trp Ser
 1 5 10 15
 Lys Met Asn Val Glu Glu Ala Gly Gly Glu Ala Leu Gly Arg Leu Leu
 20 25 30
 Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Asp Ser Phe Gly Asn Leu
 35 40 45
 Ser Ser Pro Ser Ala Ile Leu Gly Asn Pro Lys Val Lys Ala His Gly
 50 55 60

Lys Lys Val Leu Thr Ser Phe Gly Asp Ala Ile Lys Asn Met Asp Asn
65 70 75 80

Leu Lys Pro Ala Phe Ala Lys Leu Ser Glu Leu His Cys Asp Lys Leu
85 90 95

His Val Asp Pro Glu Asn Phe Lys Leu Leu Gly Asn Val Met Val Ile
100 105 110

Ile Leu Ala Thr His Phe Gly Lys Glu Phe Thr Pro Glu Val Gln Ala
115 120 125

Ala Trp Gln Lys Leu Val Ser Ala Val Ala Ile Ala Leu Ala His Lys
130 135 140

Tyr His
145

<210> 21
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<212> PRT
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<400> 21

Met Val His Leu Thr Pro Val Glu Lys Ser Ala Val Thr Ala Xaa Trp
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Gly Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu
20 25 30

Leu Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp
35 40 45

Leu Ser Thr Pro Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His
50 55 60

Gly Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu Ala His Leu Asp
65 70 75 80

Asn Leu Lys Gly Thr Phe Ala Thr Leu Ser Glu Leu His Cys Asp Lys
 85 90 95

Leu His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val
 100 105 110

Cys Val Leu Ala His His Phe Gly Lys Glu Phe Thr Pro Pro Val Gln
 115 120 125

Ala Ala Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His
 130 135 140

Lys Tyr His
 145

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<220>
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<400> 22
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<210> 23
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<400> 23
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<210> 24
 <211> 25
 <212> DNA
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<220>
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<400> 24
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<210> 25

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cctcgagatc tgtgcaattc actgc